Commissioning Enphase Energy System with storage using Enphase Installer App 4.XX

Contents

1 Applicable countries

- Applicable countries (non-backup configuration):
  - Germany
  - Austria
  - Belgium
  - France
  - The Netherlands
  - Switzerland
  - United Kingdom
  - Italy
  - Luxembourg
  - Sweden
  - Australia
  - New Zealand
  - Romania
  - Czech Republic
- Applicable countries (backup configuration):
  - Germany
  - Austria
  - Switzerland
  - Australia
  - New Zealand
  - South Africa
  - India

2 Overview

This document is intended for Enphase Energy System certified installation professionals commissioning Enphase Energy System in the field. This document provides steps and requirements for performing system commissioning of the Enphase Energy System. Perform the following steps to establish successful communication between Enphase Energy System components and validate that the system operates as designed.

3 Preparing the Enphase Installer App communications

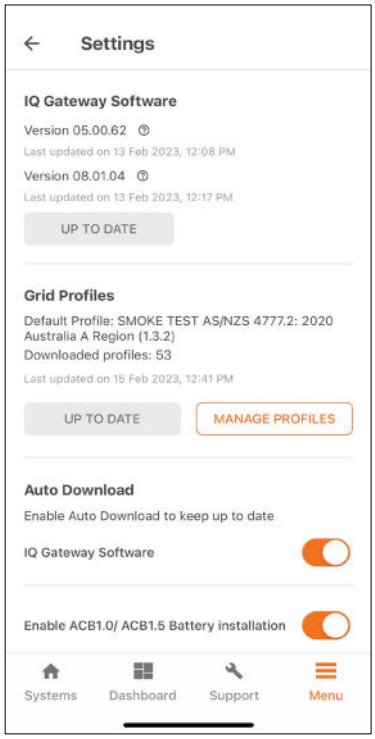
Before commissioning:

1. Ensure the system is installed as per the installation manuals.
2. Commissioning requires an Enphase-certified installer to provision Enphase devices. For more information about Enphase installer certification, visit Enphase University.
3. Ensure that you have the latest version of the Enphase Installer App.

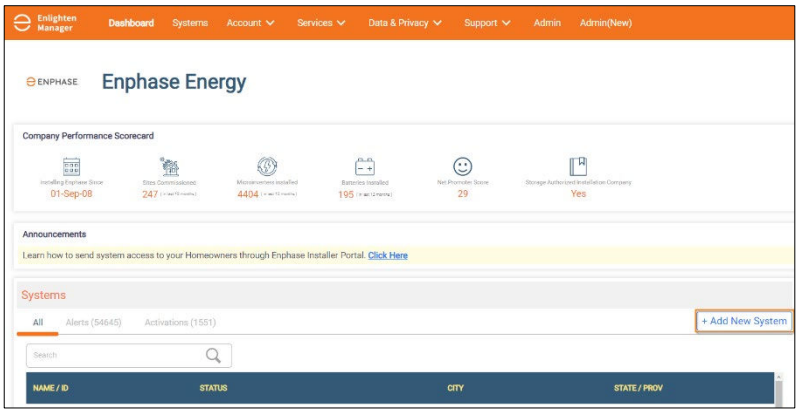
   

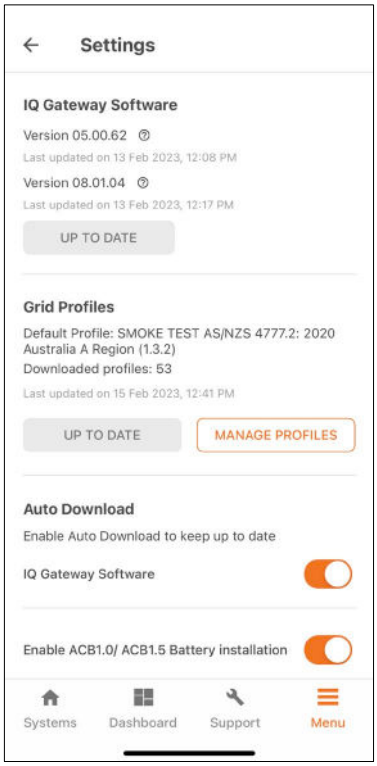
   You can install the application using the following links:
   - iOS
   - Android

4. Enable Bluetooth communication on the smartphone or tablet you use for commissioning, and turn off your device's auto-lock feature to prevent interruptions in the commissioning process.
5. Download IQ Gateway software version 8.XX (or the latest available version) on the Enphase Installer App.
    - Go to **Menu** > **Settings** > **IQ Gateway Software.**
    - Tap the **Update Now** button to begin the IQ Gateway software update process.
      The update requires an internet connection. Make sure you have a reliable connection during the update.
    - When the IQ Gateway software is downloaded, the button will be turned off with a UP TO DATE message.

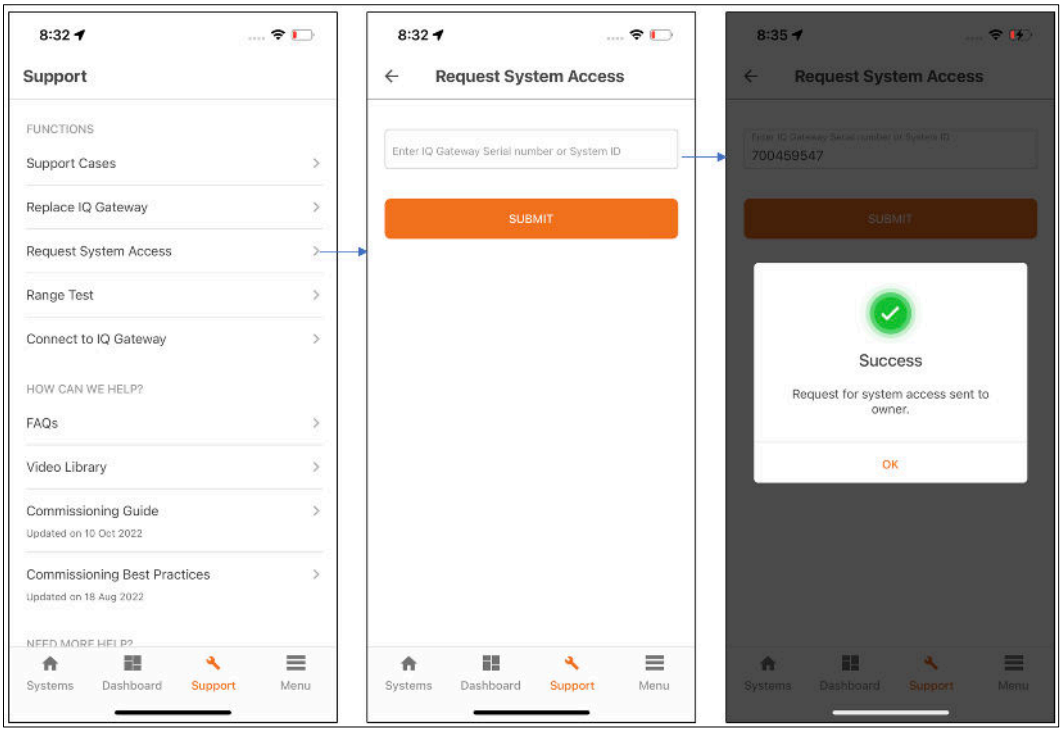


6. Click **+** on the bottom right of the dashboard. Tap **Add System** in the system menu. Use the Enphase Installer App to create a system activation. Enter the system details before onsite commissioning to save time and avoid mistakes. Alternatively, the site can be created on the Enphase Installer Portal by clicking **+ Add New System** on the system dashboard.

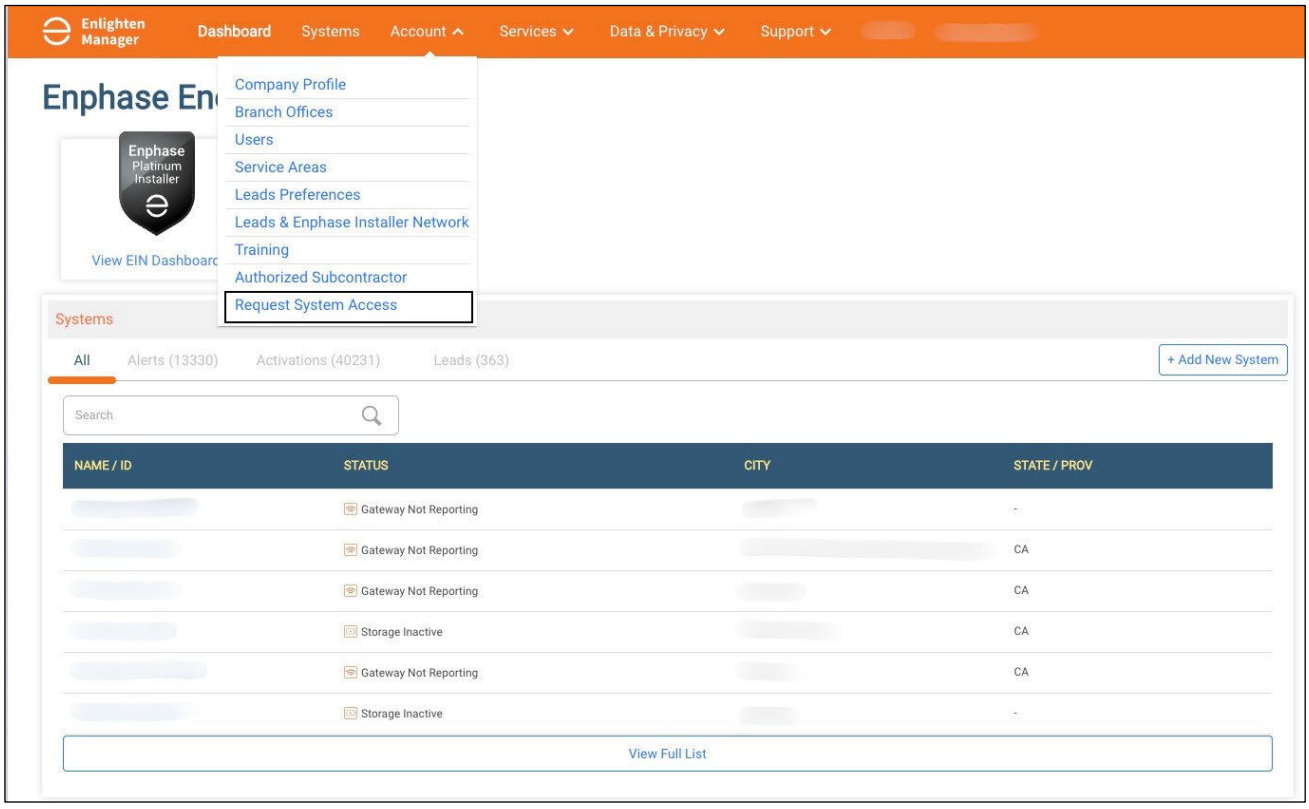




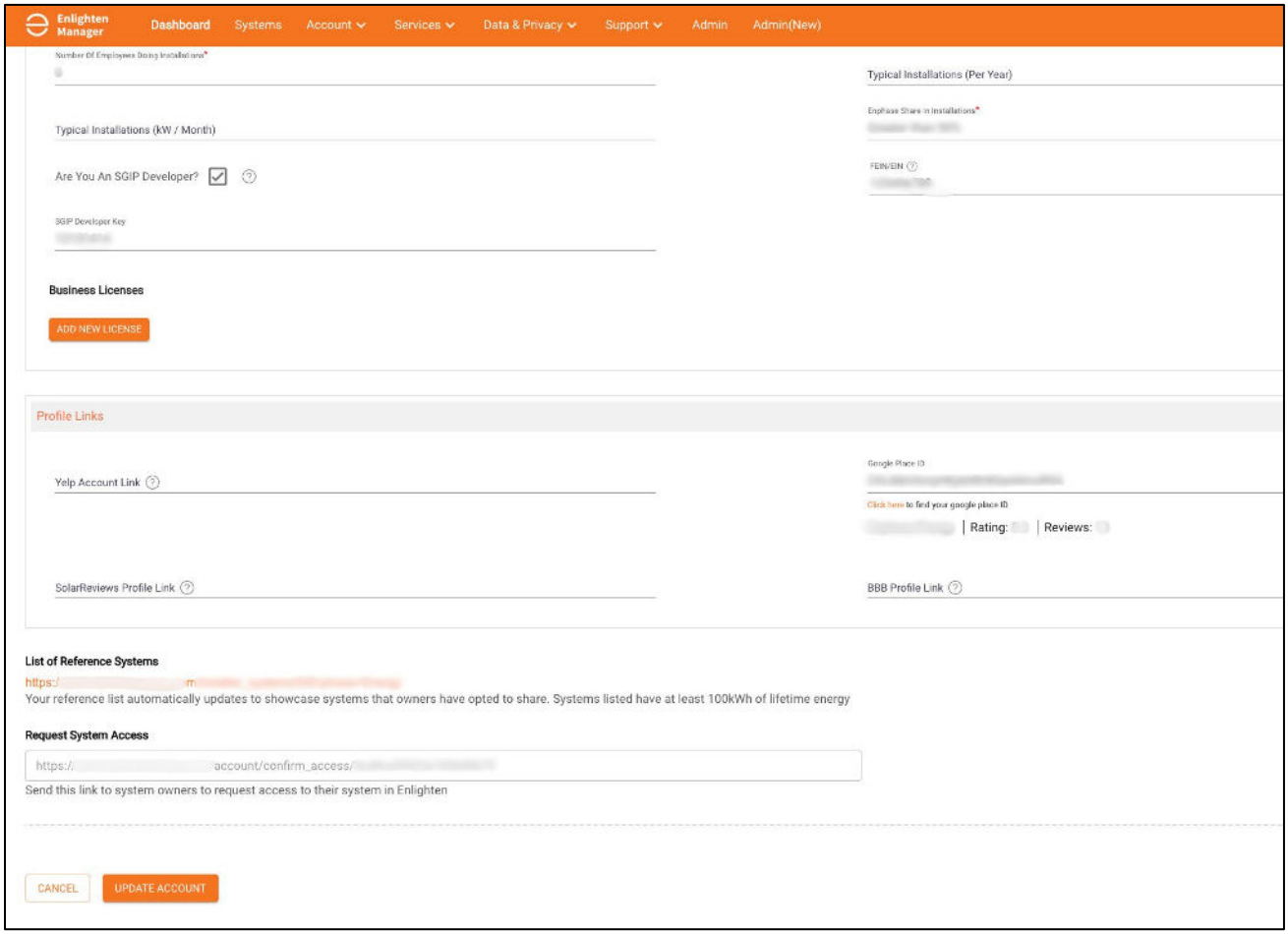
7. If you are not the original installer of the system, you must be granted access to the activation as a system maintainer. To request system access:
    - Go to **Support > Request System Access**.
    - Enter the IQ Gateway serial number and submit the request.
    - An email will be sent to the homeowner to provide access to the site.



8. Alternatively, you can request access to the Enphase Installer Portal by:
    a. Click **Request System Access**.



b. Copy the Request System Access URL and share it with the homeowner. The homeowner can then approve the System Access.



NOTE:

- IQ Batteries are shipped with approximately 30% state of charge from the manufacturer.
- The default operational mode is Self-Consumption.
- Enphase Installer App will change the battery mode to Full Backup mode after the commissioning till the battery calibration is completed in case of a backup system. The calibration will happen for the first time after the battery commissioning is completed.

IMPORTANT:

- Always follow the safety instructions provided in the Enphase installation manual and Quick Install Guide.
- After installation, IQ Batteries must always be connected to the AC supply.
- Once AC power is connected to the IQ Batteries, turn on the DC switch when instructed by the Enphase Installer App.

4 Commissioning instructions for non-backup storage configuration

NOTE: Some instructions or steps may only be relevant for system commissioning in some geographies.

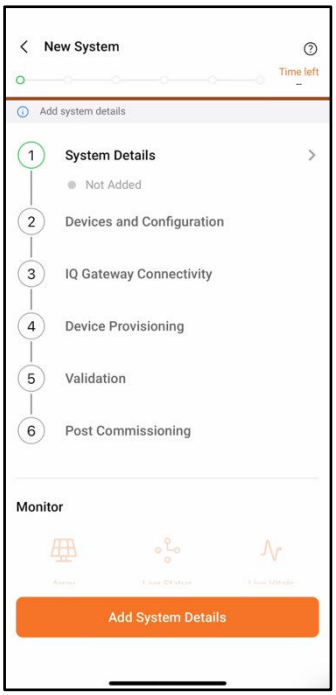
To commission the Enphase Energy System, use the Enphase Installer App commissioning wizard. Open the Enphase Installer App and tap the **Systems** tab on the lower left side of the screen.

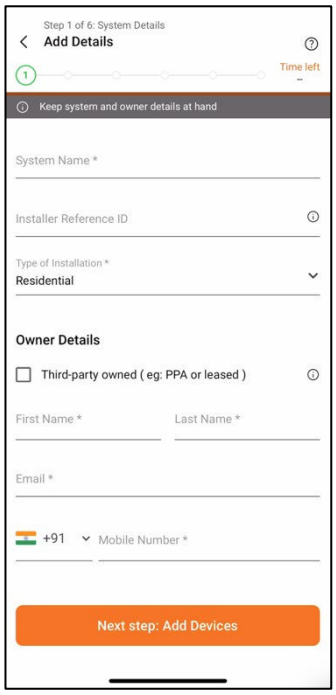
4.1 System Details (Step 1)

This step is part of an activation creation. This requires the following information:

- System name
- Type
- Installer details
- Owner details
- Address
- Grid connection type (if applicable)

Suppose the site activation is already completed on the Enphase Installer Portal. The site can be searched using the site name, site ID, postal code, city, installer reference, or IQ Gateway serial number.

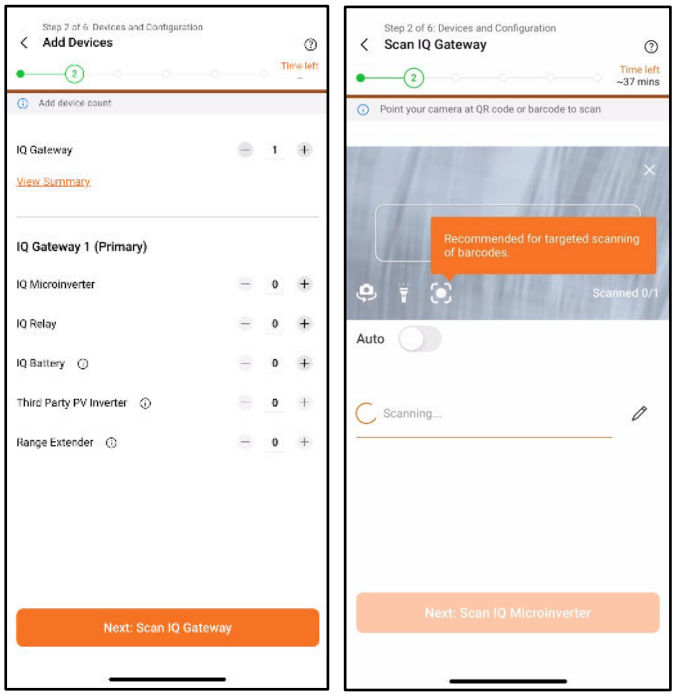




Tap **Next step: Add Devices** to continue to the next step.

NOTE: Update the Permission to Operate (PTO) status on the System Details page. This setting helps to disable/enable power production based on PTO status.

4.2 Devices and Configuration (Step 2a)

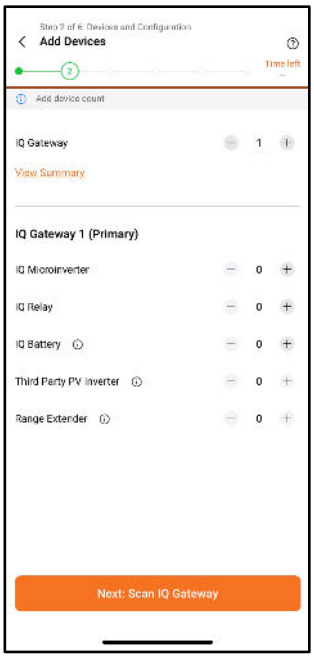


This step allows the installer to populate all the devices that should be installed.

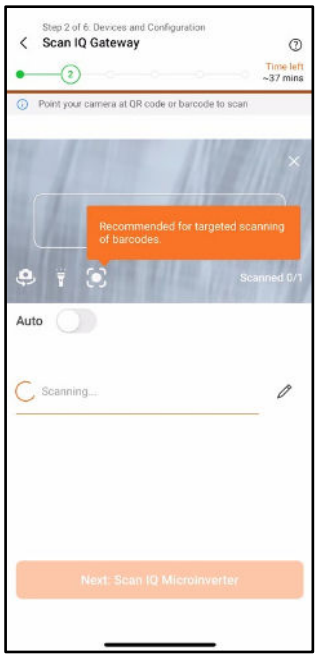
1. Tap each device and use the **–** and **+** buttons to decrease or increase the total count of the respective devices you are adding. Tap **Next: Scan IQ Gateway**.
2. You will be shown the respective scanning pages based on the devices that have been added.
3. Scan all the devices for the system.
4. A power line scan can detect the microinverters. However, it is recommended that microinverters be added to the system using the barcode scanning feature in the Enphase Installer App. In locations with other nearby Enphase installations, the line scan can **poach** an incorrect serial number from a nearby site.
5. Select the phase of the IQ Battery after scanning the serial number.

WARNING: Avoid physical PLC scans using the button provided in the IQ Gateway.

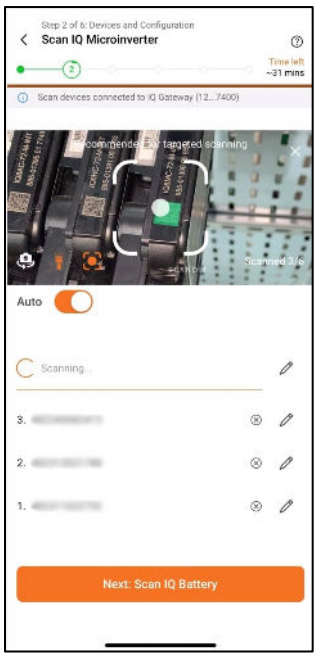
If the IQ Battery is retrofitted to an existing site, microinverters will appear during the activation.
If you intend to install a string inverter with an IQ Battery rather than microinverters, you can add string inverter details, including the manufacturer, DC, and AC capacity.



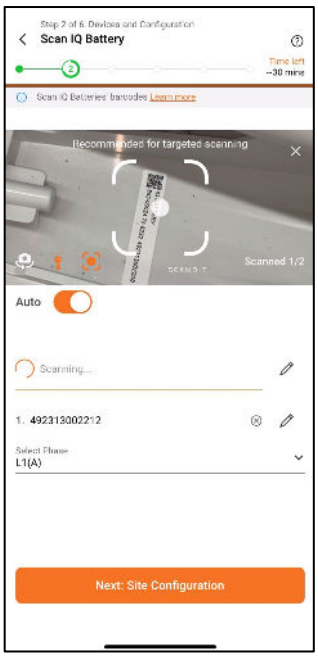
Add device count



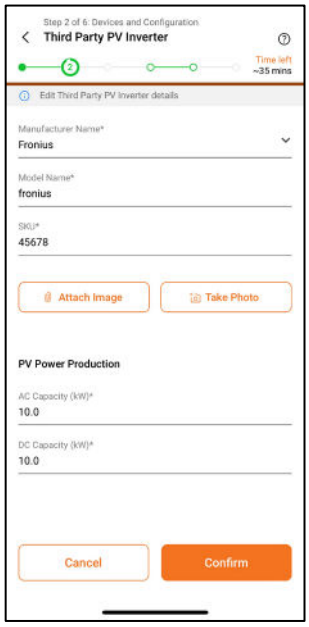
Scan IQ Gateway



Scan IQ Microinverter



Scan IQ Battery and select phase



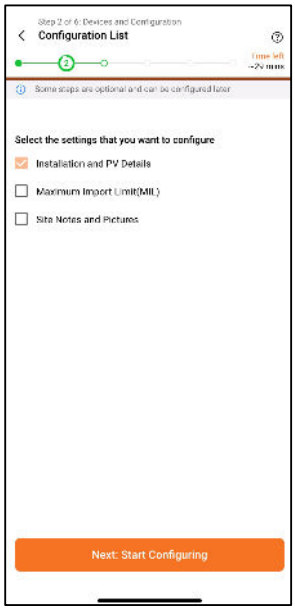
Third-party string Inverter

NOTES:

- The app automatically selects the most common grid profile. You can change it through **Site Configuration> Grid profile.**
- If retrofitting an existing site, microinverters will be listed in the activation.
- For details on PV-to-storage ratios, compatible microinverters, and other aspects of system design, refer to the **Enphase Energy system planning guide** (available on the **Enphase Website > Installers > Documentation Centre**).
- For an IQ Battery with a FlexPhase system, you cannot add a single-phase battery along with a three-phase IQ Battery.

4.3 Site Configuration (Step 2b)

You can select the settings you want to configure from the Configuration List. The mandatory configurations are auto-selected and disabled for editing. Depending on the site you are commissioning, you may find some optional configurations in the Configuration List. The following are the details of the configurations.



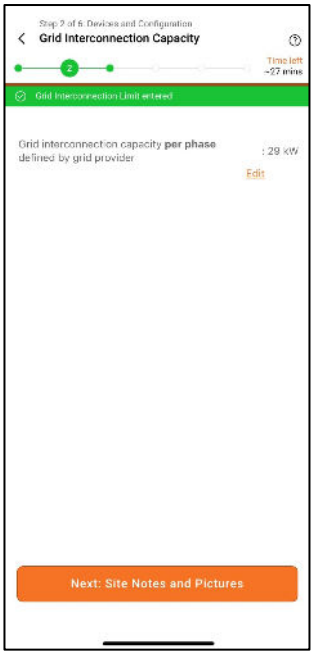
Configuration List

Maximum Import Limit/ Grid Interconnection Capacity

- **Site Notes and Pictures**: You can add notes and images of the site using the site notes feature.
  - If you select **Site Notes and Pictures** in the list of configurations, you can store important notes and installation images, which can be viewed later using the Enphase Installer Portal.
  - You can update the grid profile from the **Grid Profile** configuration sub-menu of the site configuration step (step 2b).
- **Maximum Import Limit (MIL)/Grid Interconnection Capacity**: The Site Maximum Import or Grid Interconnection Limit feature helps the Enphase Energy System import or export within the specified limit and avoid tripping the grid connection fuse or breaker.

4.3.1 Adding the Maximum Import Limit/Grid Interconnection Capacity

1. The Site Maximum Import or Grid Interconnection Limit is shown in the Enphase Installer App Site Configuration step.
2. The Site MIL/GIC value is sent to the IQ Gateway while provisioning the devices to the IQ Gateway.



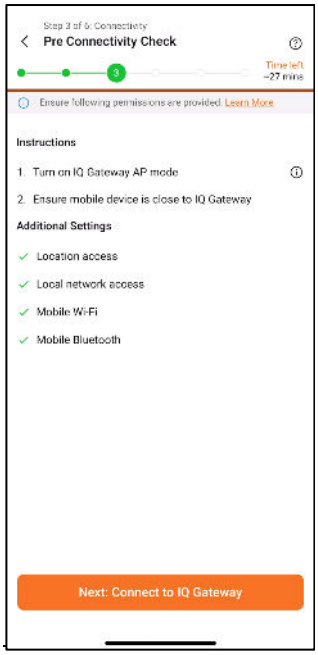
In the United Kingdom, you can set the site MIL value as 60 A, 80 A, or 100 A. Use the **Others** option to choose any other value between 60 A and 100 A. For a commercial site, you can set the value up to 200 A.

NOTE: The site configuration list depends on the country and the system type you are commissioning. The Maximum Import Limit/ Grid Interconnection Capacity is a mandatory input for an Enphase Energy System and installer is recommended to keep the information handy before starting commissioning.

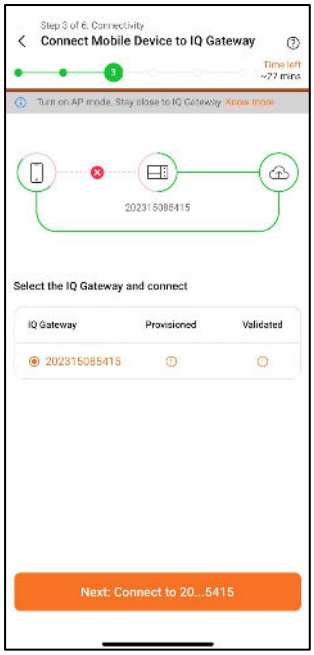
4.4 IQ Gateway Connectivity (Step 3)

Step 3 brings up a screen that displays the connectivity status between the IQ Gateway, the Enphase Cloud, and your smart device running the Enphase Installer App.

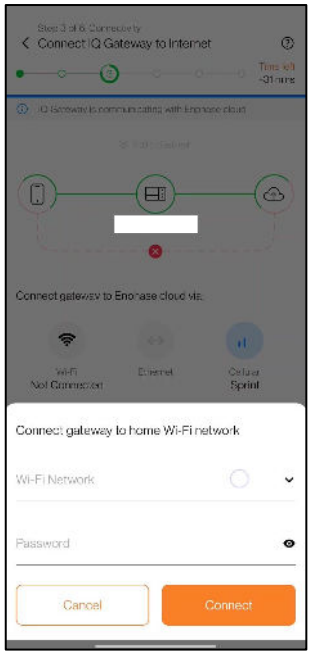
- At the end of the site configuration, tap **Next Step: IQ Gateway Connectivity** to start the pre-connectivity check for IQ Gateway.
- The Enphase Installer App performs an automated check at this step to ensure all relevant permissions from the device are received. If any error is shown, tap **Resolve** against the error to provide permission/resolve the error
- After the pre-connectivity check is complete, tap **Connect to IQ Gateway** to reach the IQ Gateway connectivity page.
- Select the IQ Gateway to connect to and tap **Connect to XXXX**. If you commission a site of only one IQ Gateway, the IQ Gateway will be auto-selected.
- Configure Wi-Fi. If it was not configured earlier, select the Wi-Fi network you want to connect to and enter its password.
- If a gateway update is shown, perform the IQ Gateway update process.
- After all mandatory steps are completed for the step, you will be shown the option to start provisioning by tapping **Next Step: Provisioning**.



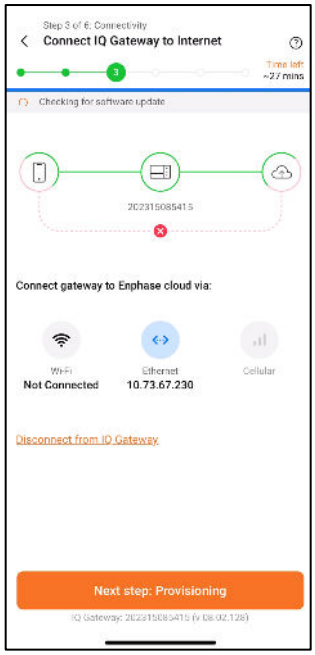
Pre Connectivity Check



IQ Gateway connectivity page



Wi-Fi configuration



Mobile connected to IQ Gateway in AP mode

NOTE: You can open help for the step by tapping the (?) icon at the top right of the app. On the Gateway Connectivity page, you can start/stop the remote gateway connection and use the diagnostic tools to check connectivity status.

4.5 Device Provisioning (Step 4)

The Enphase Installer App performs the following pre-provisioning check before opening the provisioning screen:

- Installer certification: If the installer is certified to commission the system.
- IQ Gateway version: If IQ Gateway software satisfies the minimum version required.
- Device scanning: To check if any serial number of the device has not been scanned.

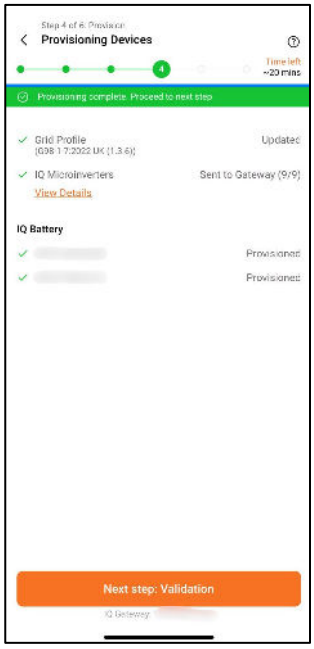
Before provisioning:

- Ensure the Communications Kit is plugged into the left USB port of the IQ Gateway.
- Ensure the Enphase Mobile Connect cellular modem is plugged into the correct port of the IQ Gateway (for a backup system). This is not mandatory for a grid-tied storage system.
- For a third-generation system, ensure the CTRL headers are correctly installed. For best practices regarding CTRL cable, refer to the wiring section of the IQ Battery 5P quick installation guide.

To start provisioning:

- Press **Next: Start Provisioning**. The process will run the following steps automatically:
  - ✓ Update grid profile
  - ✓ Update tariff
  - ✓ Provision microinverters
  - ✓ Provision IQ Battery

Pre-provisioning check



Provisioning page

After the provisioning is complete, press the **Next step: Validation**.

NOTE: If you commission the IQ Battery 3T/10T and the IQ Batteries are not communicating with the IQ Gateway, power cycle the batteries by following the instructions mentioned in Appendix 8.3.

4.6 Validation (Step 5)

Complete the validation step to check if the installation is done correctly. The validation step has the following sub-steps.

4.6.1 IQ Relay validation

IQ Relay validation is used for a site where a single-phase IQ Relay/Q Relay is installed and provisioned.

The different status of IQ Relay validation:

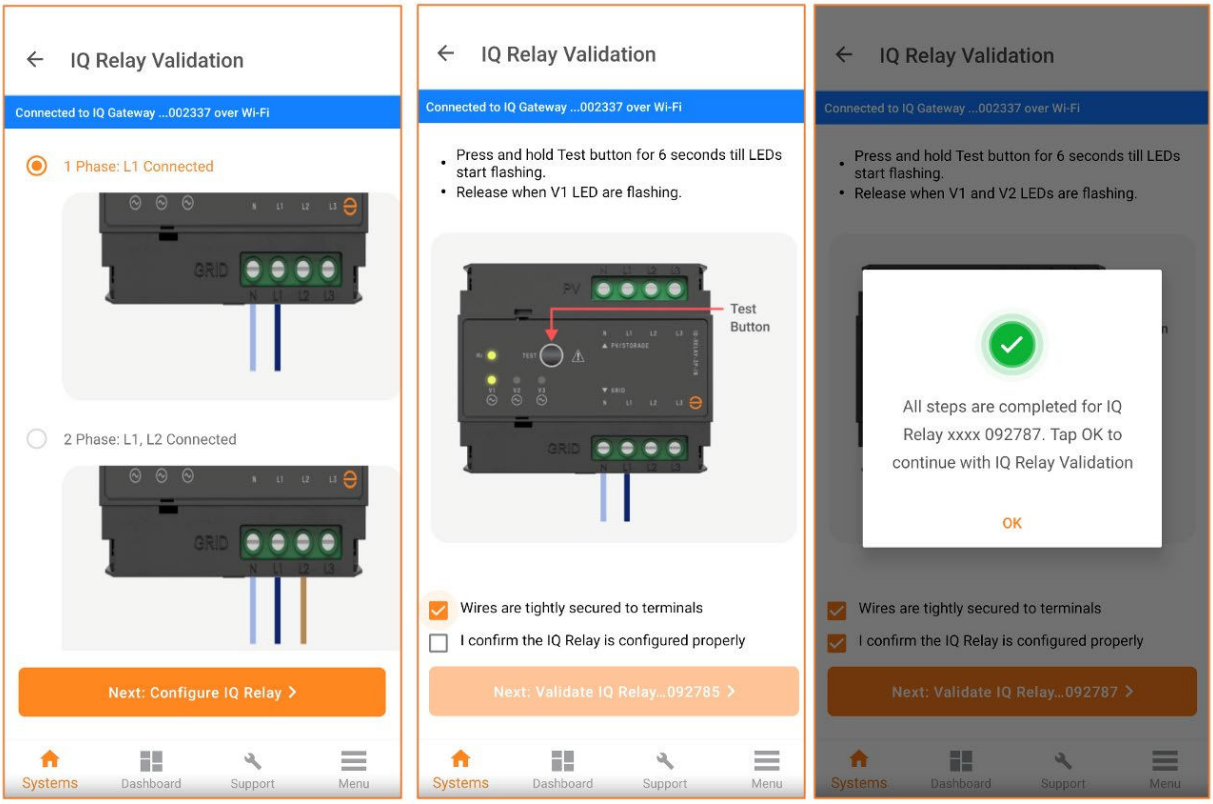
- Validated: The IQ relay is operating; that is, the relay is closed.
- If the IQ Relay's status is open, that is, in a faulty state, the Enphase Installer App will guide you through configuring it.

4.6.1.1 Configuring the IQ Relay

In the Enphase Installer App, select the phase of the grid connection.

- 1 Phase
- 2 Phase
- 3 Phase

You will be guided on configuring the IQ Relay based on the selection.



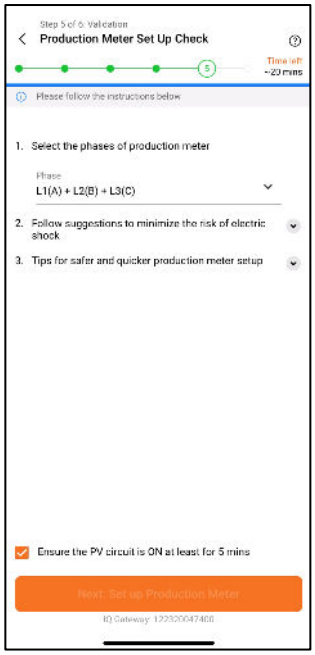
4.6.2 Meter configuration

4.6.2.1 Production Meter

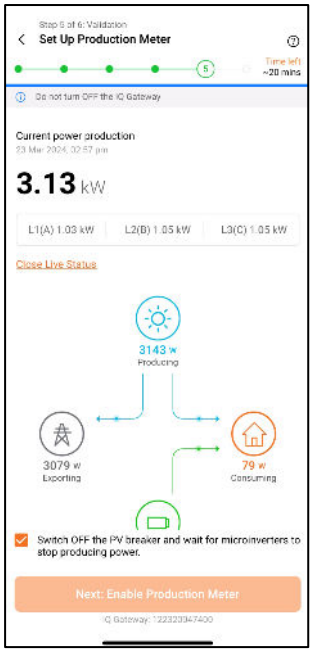
Perform the following instructions on the screen. The app checks if the production meter readings are positive when producing PVs. Production readings are reduced to zero when PV breakers are turned off.

1. Select the correct phase for installing the microinverter branches. Ensure the PV breaker is turned ON and the microinverters are connected to the AC utility grid. Tap **Next: Set up Production Meter**.
2. Power off the PV Breaker.
3. Wait for the PV to curtail the production, and the app detects no production. Tap **Next: Enable Production Meter** to enable production meter.

NOTE: The IQ Microinverters are only powered by the DC supply of the individual solar panels.



Production Meter Set Up Check



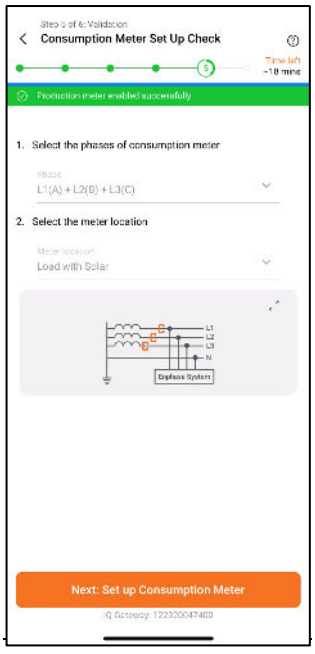
Turn off the PV breaker

Tap Next: Enable Production Meter after the production drops to Zero

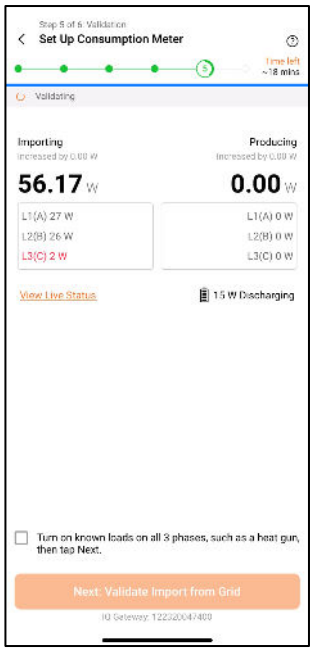
4.6.2.2 Consumption Meter

Verify that the configuration matches the installation, i.e., that phase selection and the location of the meter are entered correctly.

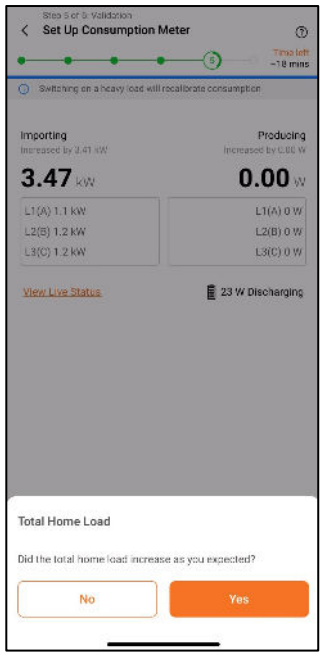
1. Turn on a known load. Tap **Next: Validate Import from Grid**. Check and confirm the wiring of the IQ Gateway.
2. Switch on the PV breaker to reduce the net import from the grid. Tap **Next: Enable Consumption Meter** to enable the meter.



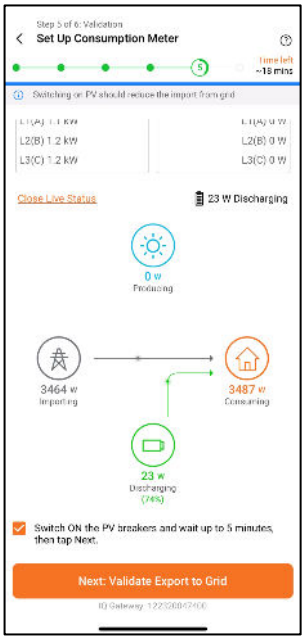
Select phase and meter location.



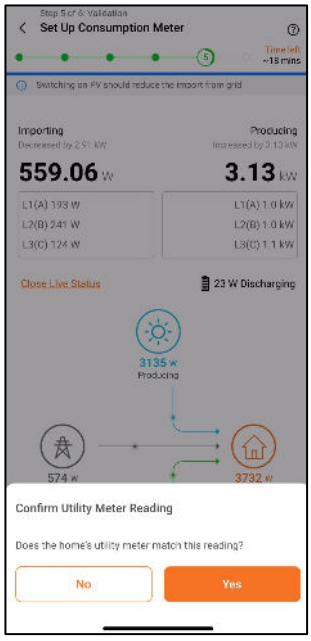
Turn on the load in the house



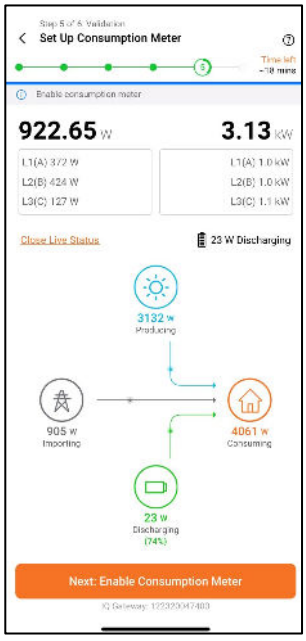
Confirm if the consumption reading has increased



Turn on the PV breaker.



Confirm if the consumption reading has reduced

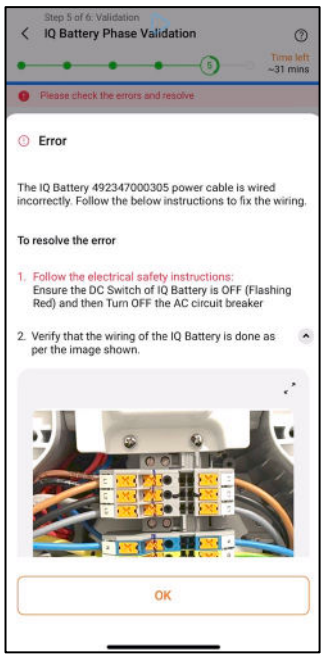


Enable the Consumption Meter

NOTE: Enabling the consumption meter ensures the successful configuration of the EnFLuRI sensor. The installer can download the certificate of conformity from the Enphase Documentation Center.

4.6.3 IQ Battery Phase Validation (If applicable)

The Enphase Installer App automatically checks if the wiring of the IQ Battery and IQ System Controller (in case of backup configuration) is correct. If any wiring issues are detected, the installer will be shown an error message along with instructions on how to fix the error.



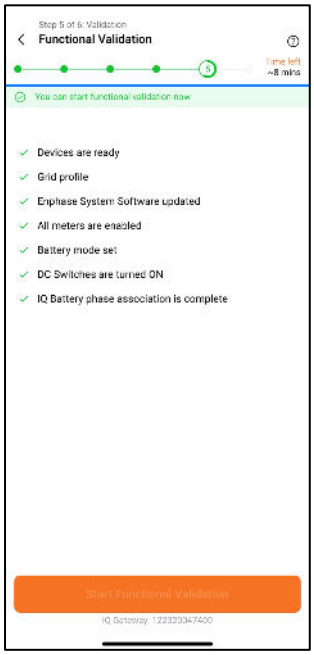
4.6.4 Functional validation

The Enphase Installer App checks if the battery performs charging and discharging activities successfully.

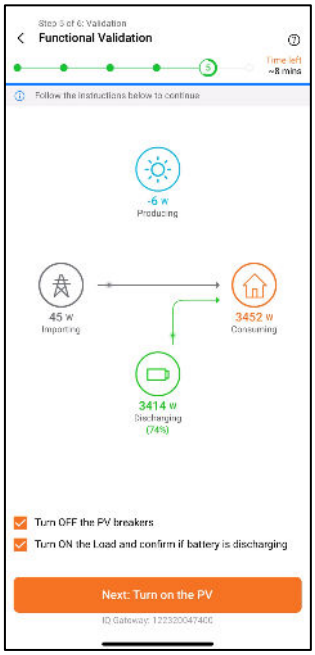
Follow the on-screen instructions to complete the functional validation.

1. Turn on the load and confirm that the battery is discharging.
2. Turn on the PV circuit breakers.
3. Turn off the loads to ensure that production exceeds consumption.
4. Wait for the microinverters to reconnect (30 seconds to 5 minutes, depending on the grid profile).
5. Turn off the known load and confirm that the batteries are charging using the Live Status interface and LED indicators on each battery.
6. Your system is now functionally validated.

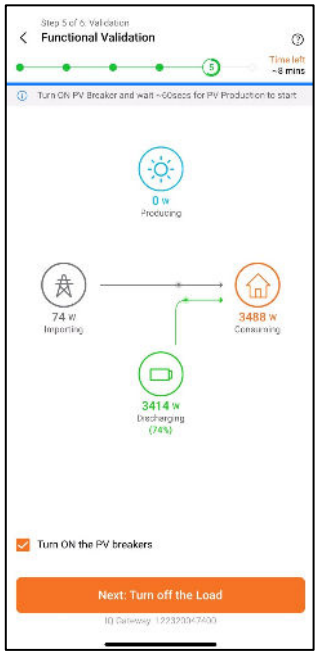
NOTE: Charging up to 100% state of charge is critical to ensure that the state of charge reported by the system is accurate.



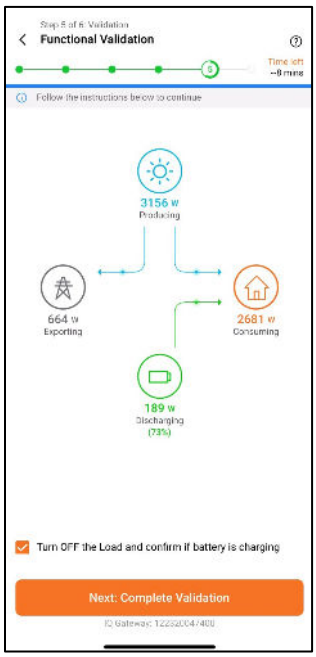
Functional Validation precheck



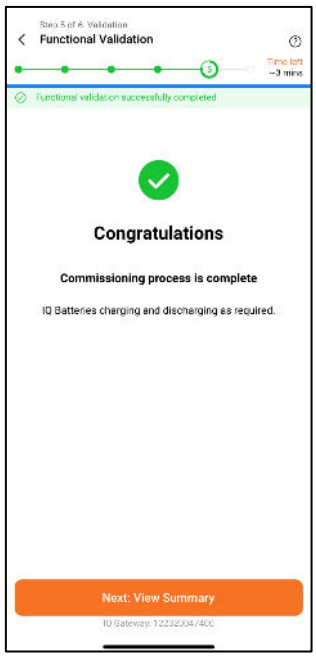
Battery discharge test



Enable PV breaker



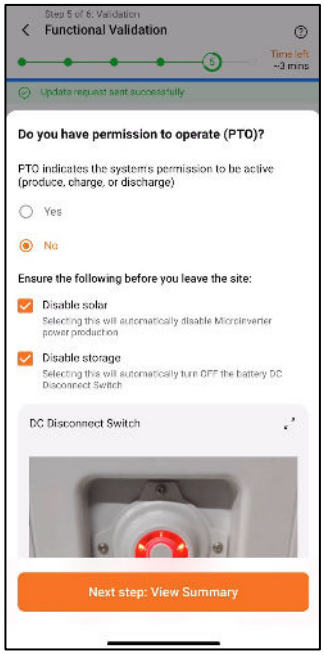
Battery charge test



Functional Validation completed

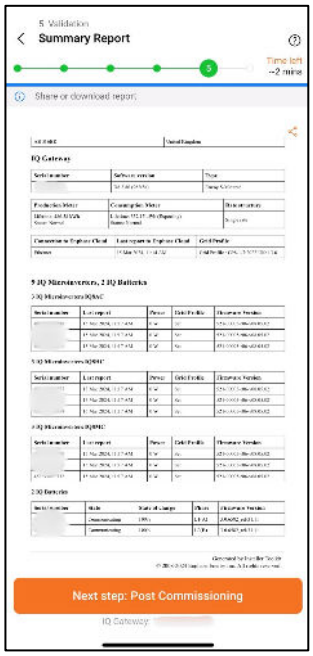
4.6.5 Permit to operate instruction

You will be shown a screen where you can indicate whether a permit to operate (PTO) has been received for the system. Select **Yes** or **No** based on whether PTO has been received. If PTO is yet to be received, the Enphase Installer App will show additional instructions on mandatory steps before leaving the sites.



4.6.6 Summary report

The summary report shows essential information about the system, including system details, device serial number, status, and grid profile.
You can share this report by email or AirDrop. It contains details of each provisioned device and the system's commissioned status.



4.7 Post Commissioning (Step 6)

Provide the homeowner a walkthrough and access, set the tariff, and change the IQ Battery operating modes. Your device must be connected to the internet to complete these steps

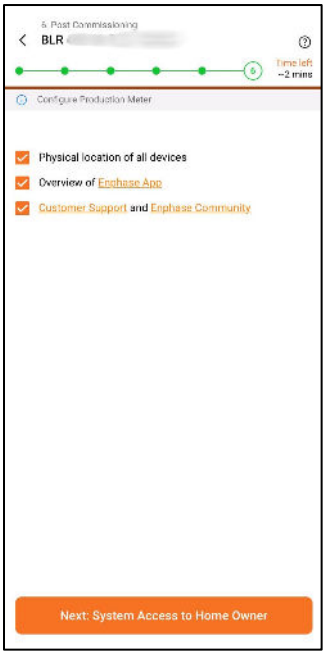
4.7.1 Homeowner walkthrough

Verify each item on the checklist with the homeowner.

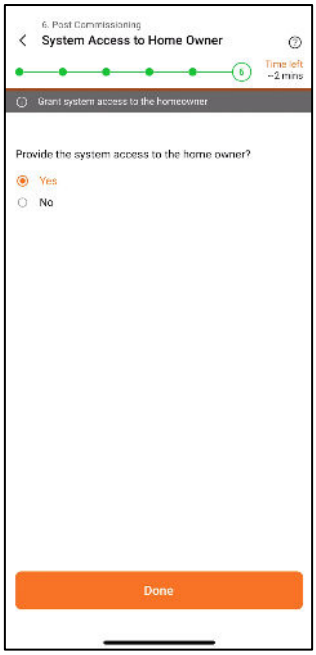
- Check all the tick boxes to acknowledge that you have communicated this information to the homeowner.
- Tap **Confirm** to complete this step and proceed to the next.

4.7.2 Access to the homeowner

Tap **Yes** to provide homeowner access to the system.



Homeowner walkthrough



Providing system access to the homeowner

4.7.3 Electricity rate structure

There are two tariff settings in the Electricity Rate Structure feature.

- Electricity Import Rate
- Electricity Export Rate
  - Follow the prompts to set up the Import Rate.
  - Check the tariff structure with the customer and enter the information accordingly.
  - Check Add Electricity Export Rate.

4.7.4 Profile

You can choose the system profile in the Profile menu.

4.7.5 Battery

You can select the battery-related settings in the Battery menu.

5 Commissioning instructions for backup storage configuration

NOTE: Some instructions or the following steps may only be applicable for system commissioning in some geographies and not applicable to other geographies.

5.1 System Details (Step 1)

Follow the steps outlined in the System Details section to complete this step.

Add the following additional details, if applicable, for the geography you are commissioning:

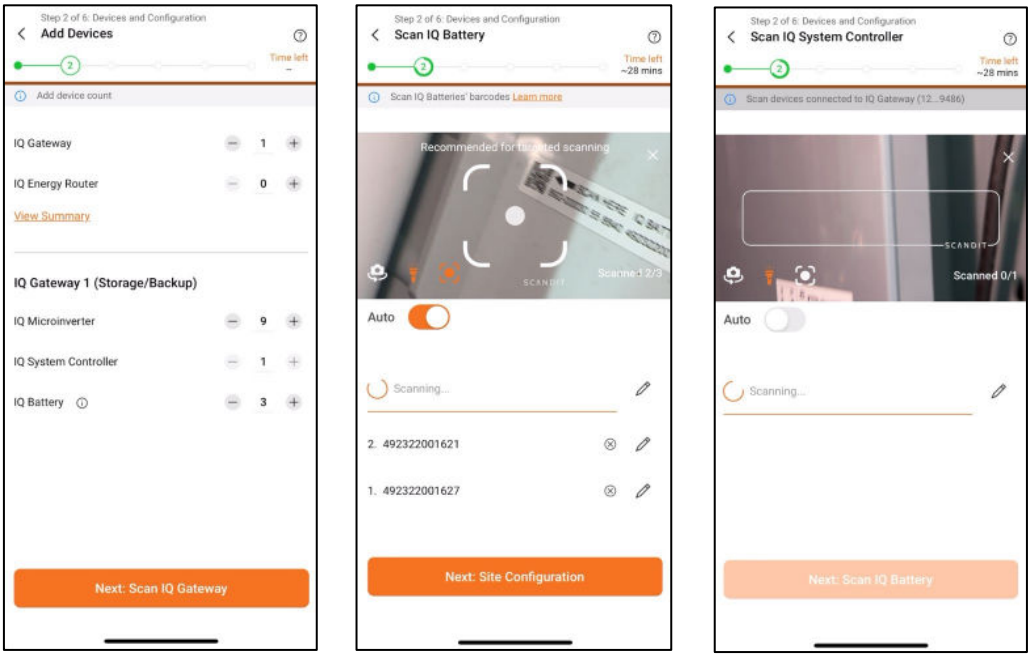
- National Meter Identifier (Applicable for Australia)

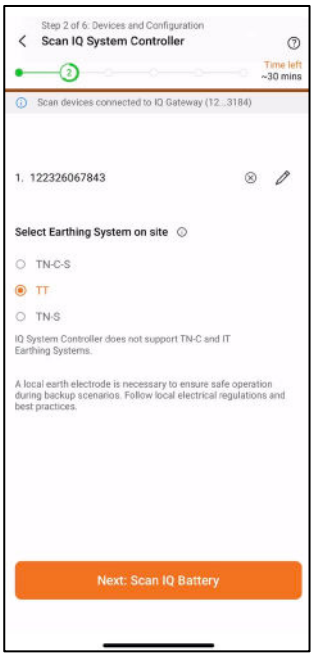
NOTE: For details on PV-to-storage ratios, compatible microinverters, and other aspects of system design, refer to the **Enphase website > Installers > Documentation Centre > Storage > Planning Guide**.

5.2 Devices and Configuration (Step 2a)

Follow the steps outlined in the Device and Configuration section to complete this step. Perform the following steps in addition to the preceding steps:

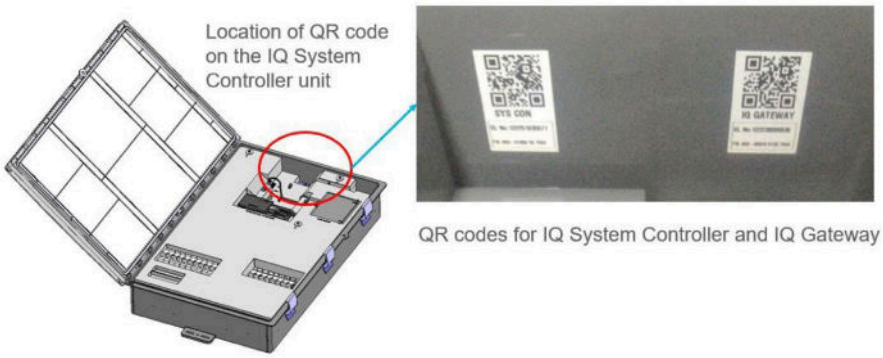
1. Add the IQ System Controller count to the device count screen.
2. Scan the IQ System Controller, as shown in the following image. IQ Battery is only allowed on phase A (L1-N).





NOTE:

- Scan the IQ Gateway using the QR code on the top right of the IQ System Controller and select the appropriate grid profile for the system.
- If you commission a backup configuration in South Africa, you will need at least two IQ Battery 5Ps to commission the Enphase Energy System successfully.



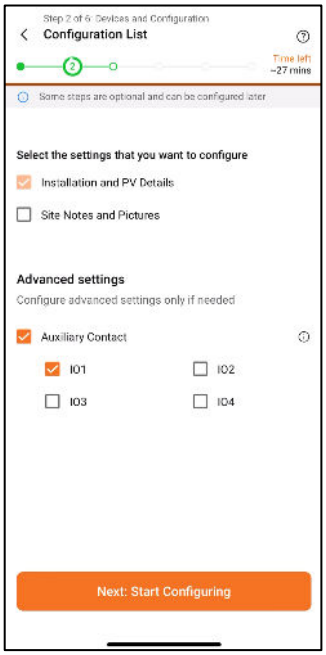
5.3 Site Configuration (Step 2b)

The Configuration List allows you to select the settings to configure. The mandatory configurations are auto-selected and disabled for editing. Depending on the site you are commissioning, you may find some optional configurations in the Configuration List.

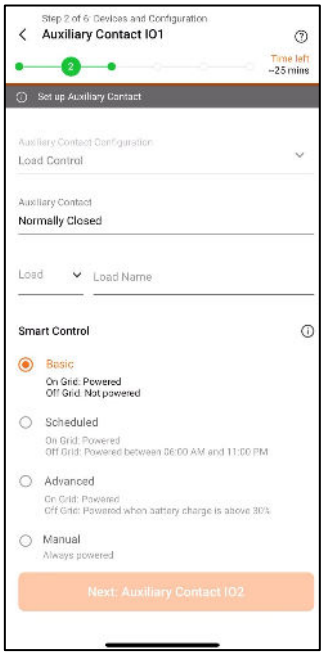
The following are the details of the configurations.

- **Installation and PV Details**: This configuration updates the permit and PV module-related details.
- **Auxiliary Contact Configuration**

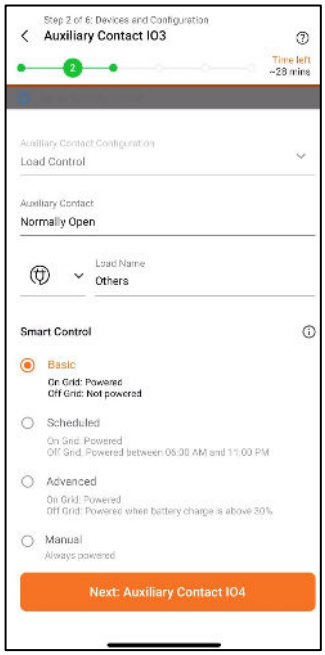
1. In the site configuration screen, select the Auxiliary contact needing configuration and all the contacts you want to configure.
2. Configure each contact by entering the required details and Smart control for each contact.



Add Auxiliary Contact in the site configuration screen

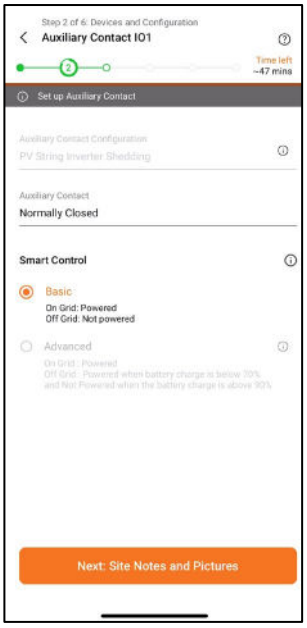


Add details for the IO contacts

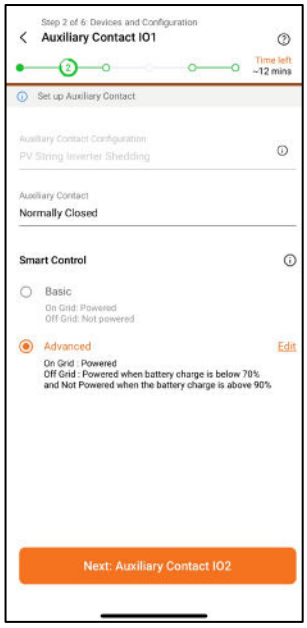


Add details for the NO contacts

- **Configuring IO1 for third-party string inverter**
  - You can add a third-party string inverter to an Enphase Energy System in a backup configuration.
  - The breaker in the third-party string inverter must be wired to the IO1 of the IQ System Controller.
  - Based on the IQ Battery and third-party string inverter rating, the Enphase Installer App will provide one or two options, i.e., Basic mode or Advanced mode.
    - Basic mode – The string inverter will be powered off when the system is off-grid
    - Advanced mode – The string inverter will be powered off in the off-grid mode if the IQ Battery charge level increases more than the upper threshold and will be powered on if the IQ Battery charge level decreases below the lower threshold. The installer can change the threshold level.

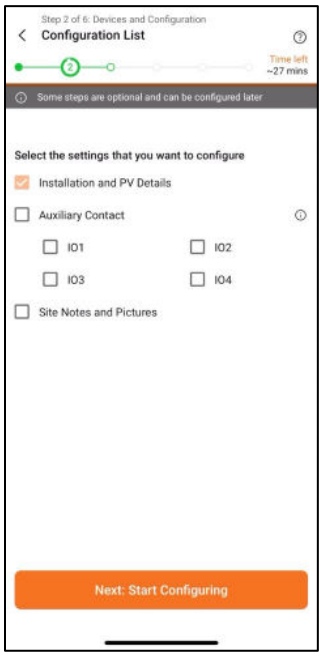


Basic Mode for String Inverter

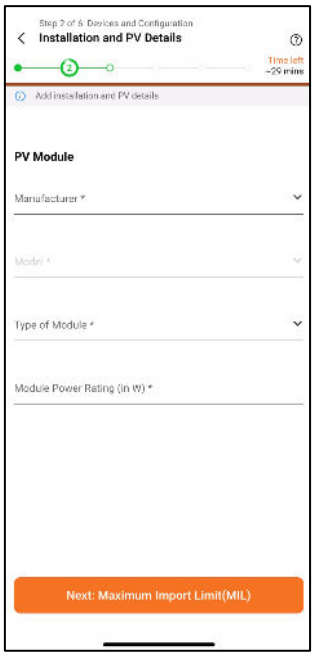


Advanced mode for string inverter

- **Site Notes and Pictures:** You can add notes and images of the site using the site notes feature.
  - If you select **Site Notes and Pictures** in the list of configurations, you can store important notes and installation images, which can be viewed later using the Enphase Installer Portal.
  - You can update the grid profile from the Grid Profile configuration sub-menu of the site Configuration step (Step 2b).



Configuration List



Installation and PV Details

5.4 IQ Gateway Connectivity (Step 3)

1. Follow the steps outlined in the IQ Gateway Connectivity step.
2. Adding a cellular modem is mandatory for an Enphase Energy System in backup configuration.

5.5 Device Provisioning (Step 4)

Follow the steps outlined in the Device Provisioning step. In addition to other devices added, the IQ System Controller will be provisioned as part of this step for backup configuration.

5.6 Validation (Step 5)

5.6.1 Meter configuration

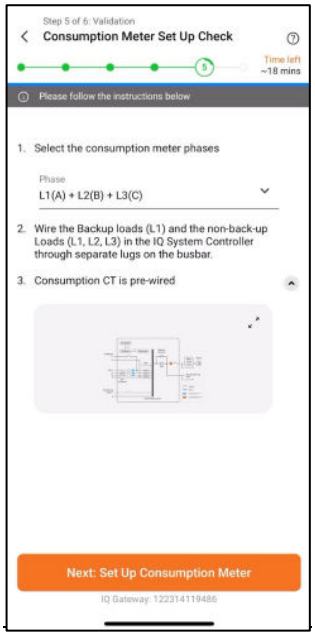
5.6.1.1 Production Meter

Follow the steps outlined in the Production Meter step.

5.6.1.2 Consumption Meter

1. Verify that the configuration matches what is installed, and the number of phases connected to the system.
2. Enable the meters by verifying the readings through the meter wizard.
3. Switch off all PV breakers (microgrid and non-microgrid) as instructed to ensure the readings go to zero before enabling.
4. While in the consumption meter wizard, turn on the PV and a known load in the home to confirm consumption rises as expected.

NOTE: The Consumption CT should be installed on the grid side.



Select phase and meter location

Turn on the load in the house

Confirm if the consumption reading has increased

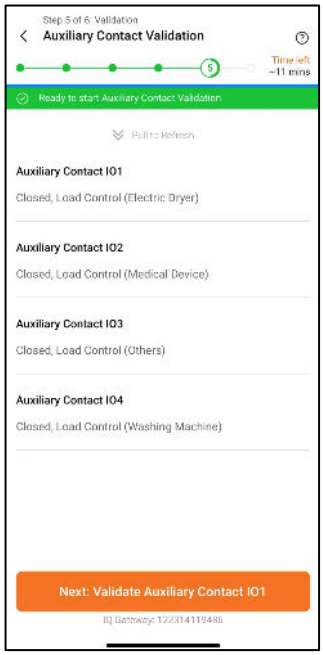
Turn on the PV breaker

Enable the Consumption Meter

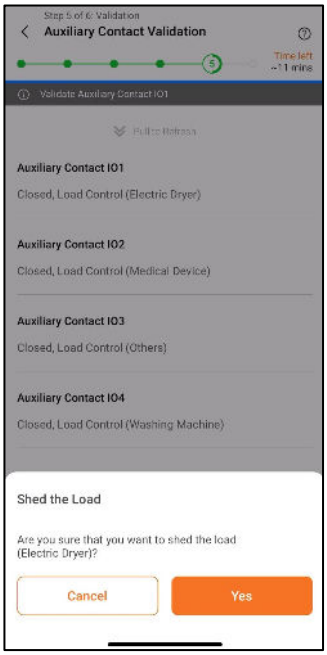
5.6.2 Auxiliary contact validation

After completing meter validation, you will be guided to the **Auxiliary Contact Validation**.

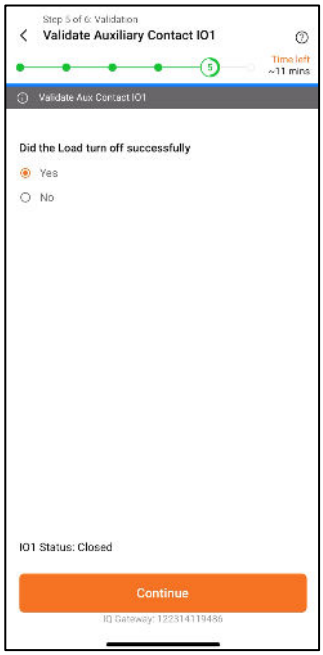
1. Tap each contact to validate it.
2. Tap **Yes** to turn off the load contact.
3. Verify if the contact is turned off.
4. Continue the validation for all IO contacts.



Select the Auxiliary Contact



Confirm to Shed the load



Confirm if the load is turned off

NOTE: The auxiliary contact can be revalidated if any settings are changed on-site.

5.6.3 IQ Battery Phase validation

The Enphase Installer App automatically checks if the wiring of the IQ Battery and IQ System Controller is correct. If any wiring issues are detected, the installer will be shown an error message along with instructions on how to fix the error. For more information, refer to IQ Battery Phase Validation (If applicable) section.

5.6.4 Functional validation

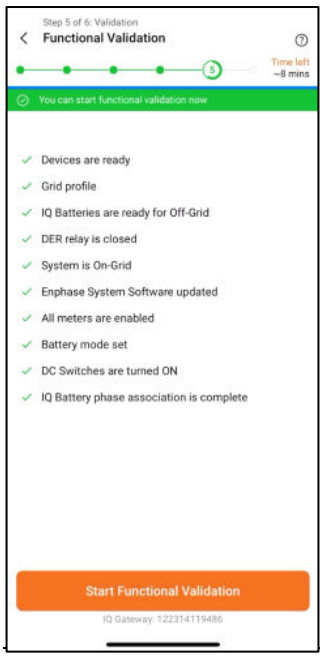
A functional validation precheck is performed before the start of the functional validation to ensure the Enphase system is ready to go off-grid. Resolve any issues highlighted to complete this step. Tap Start Functional Validation when all prechecks are passed.

Functional validation includes six sub-steps, and you must confirm the condition of each step to proceed to the next step.

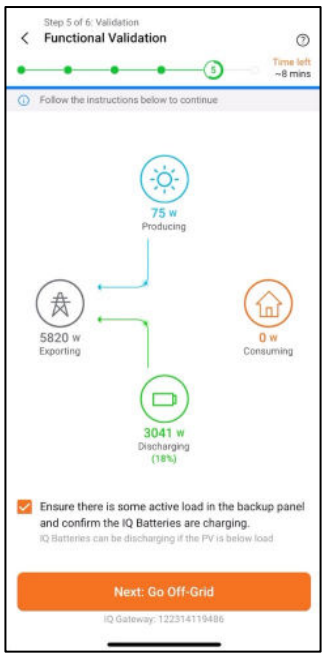
1. Ensure an active load is in the backup circuit.
2. Ensure the Load is under the installed IQ Battery capacity, then tap the **Next: Go OffGrid** button. Wait approximately 45 seconds for the microgrid interconnect device (MID) to open. You will hear a click when this occurs.
3. Confirm that the system is now off-grid and that backup loads remain powered. Turn on additional backup loads and confirm that the consumption value has increased.
4. Tap the **Next: Go On-Grid** toggle and wait for the MID to resync to the grid. You will hear a click when this occurs.
5. You will be shown a success message if the transition is successful.

NOTE:

- The Enphase Installer App will automatically change the IQ Battery mode to Full Backup to bring the state of charge to 100%.
- Charging up to 100% state of charge is critical to ensure that the state of charge reported by the system is accurate.



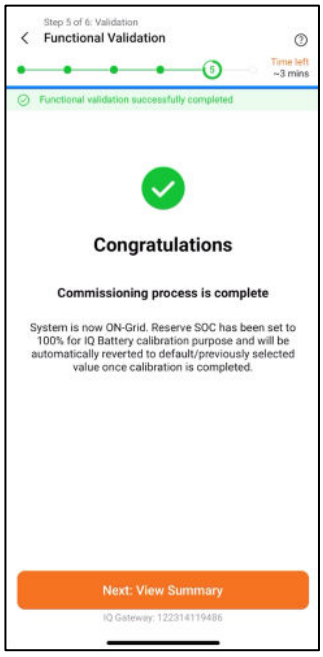
Functional Validation pre-check



Go Off-Grid

Confirm if backup loads are powered up

Go On-Grid



Functional Validation successful

5.6.5 Summary report

Follow the steps outlined in the Summary report step.

5.7 Post Commissioning (Step 6)

Follow the steps outlined in the Post Commissioning (Step 6).

6 Commissioning IQ Energy Router

This section is intended for Enphase-certified installers who commission the Enphase Energy System with IQ Energy Router to monitor and control IQ Energy Router peripherals like Heat Pump and EV charger.

Follow the steps below to establish successful communication between the IQ Energy Router, EV charger, heat pumps, and IQ Gateway.

6.1 Applicable countries

- Germany
- The Netherlands
- Switzerland
- Austria
- Belgium

6.2 Pre-commissioning process

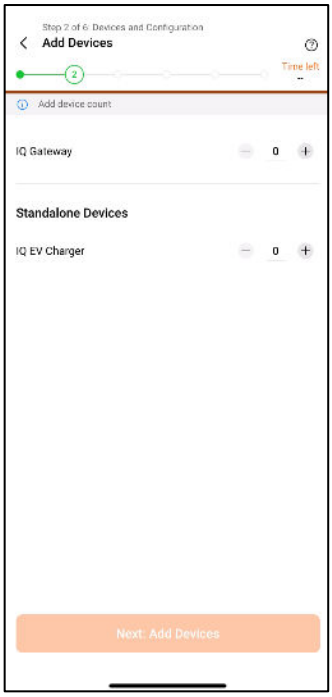
EV chargers, heat pumps, and the Home Energy Management hardware components must be installed and configured before pairing and commissioning the IQ Energy Router.

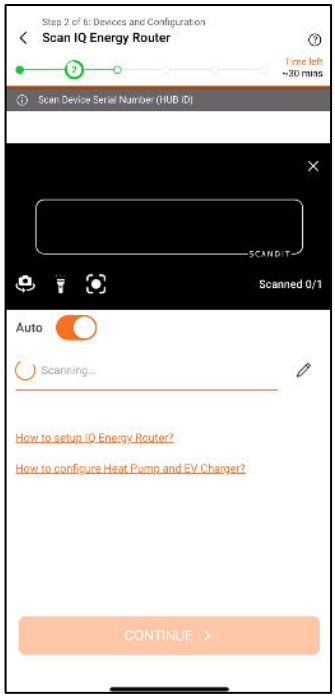
Refer to these regional web pages to learn more about installing and configuring the supported EV Chargers and heat pump models. The IQ Energy Router can only pair with a third-party EV charger and heat pump after these devices are configured.

- Germany
- The Netherlands
- Switzerland
- Austria
- Belgium

6.3 Commissioning process

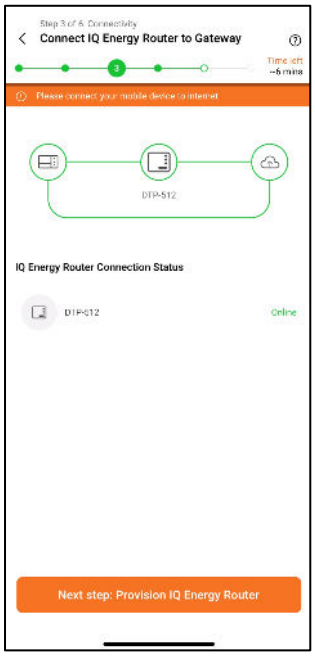
1) Device and configuration:
   a) You can add the IQ Energy Router count in the **Add Devices** screen. Each site can add a maximum of one IQ Energy Router.
   b) Add devices like a Heat pump and an EV charger to the IQ Energy Router.
   c) Scan/Enter the IQ Energy Router serial number manually (mentioned as Hub ID at the bottom). Ensure you are connected to the internet to complete this step.

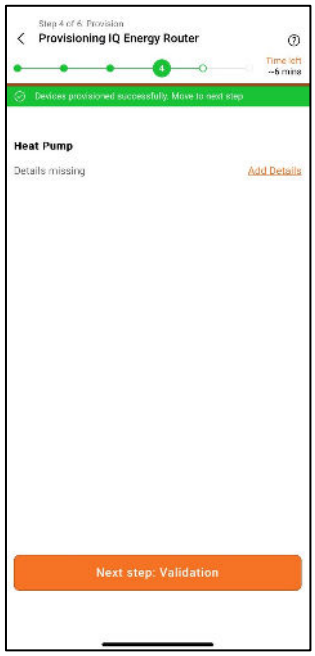


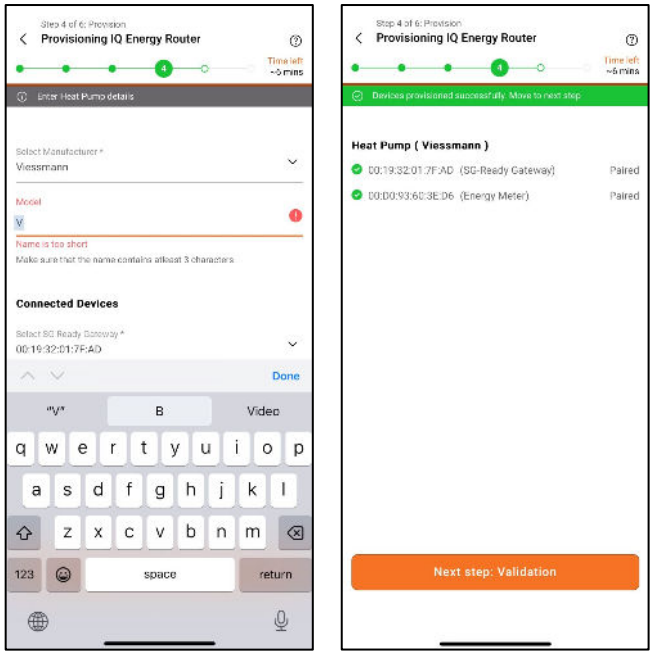


2) IQ Energy Router connectivity:

   a) Set up the IQ Energy Router and connect it to the internet using the Ethernet cable.
   b) Complete the commissioning of the Enphase Energy System. In the Summary report, tap **Next step: Connect to IQ Energy Router**.
   c) Configure the IQ Energy Router peripherals, such as the heat pump and EV charger, at the site.





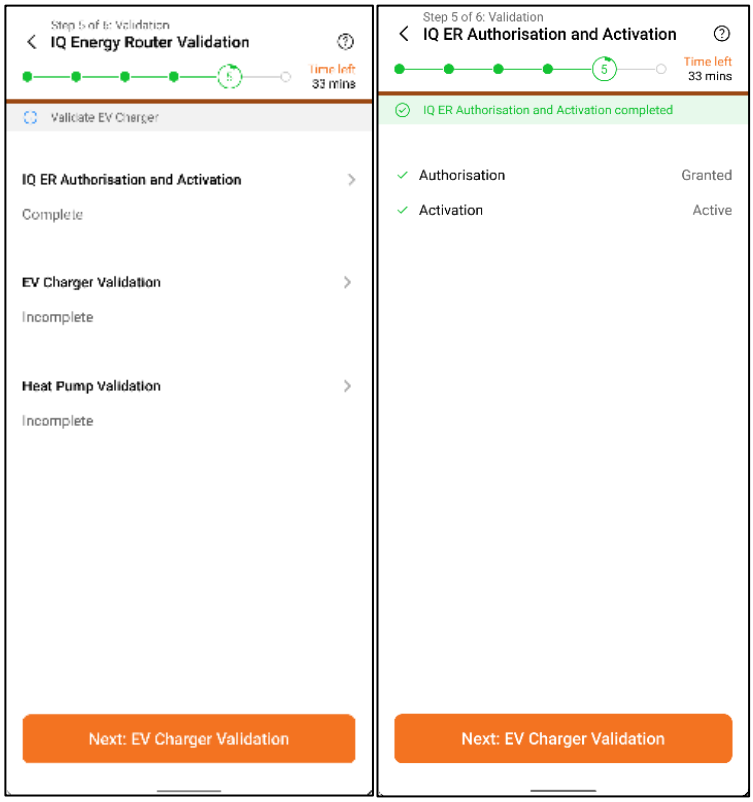


3) Provision IQ Energy Router:

   a) Tap on **Next step: Provision IQ Energy Router** to complete the provisioning of the IQ Energy Router.
   b) Enter the details of the peripherals if not entered earlier.

4) Validation:

   a) Tap **Next step: Validation** to complete the authorization and activation of the peripherals. Once the IQ Energy Router is activated, proceed to complete the validation of the associated heat pump and EV charger.

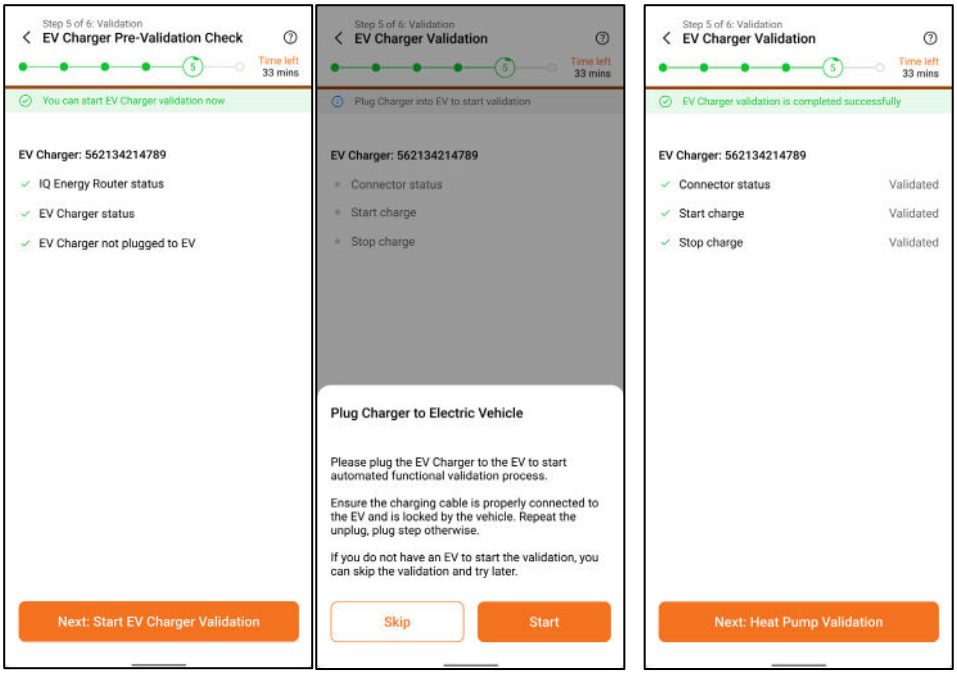


b) **EV charger validation**

i) Verify prerequisites: Ensure IQ Energy Router activation is complete, and confirm that both IQ Energy Router and EV charger are online. Confirm that the EV charger connector is unplugged.

ii) Start validation: Plug in the EV charger to initiate automated validation, including start and stop charging sequences.

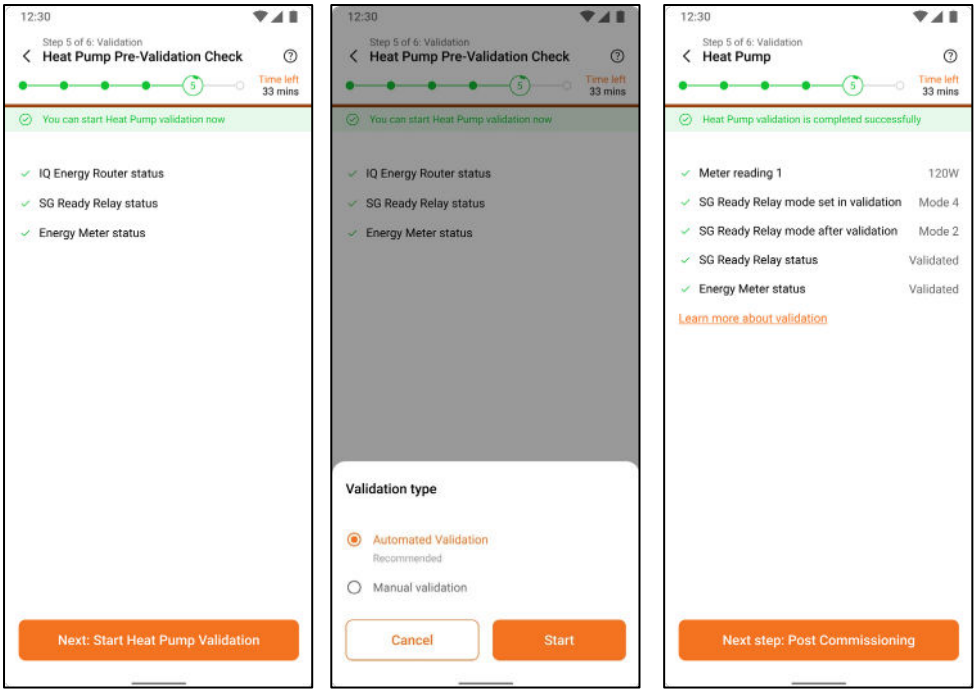
iii) Complete validation: After successful validation, unplug the charger and proceed with the next steps.



c) **Heat pump validation**

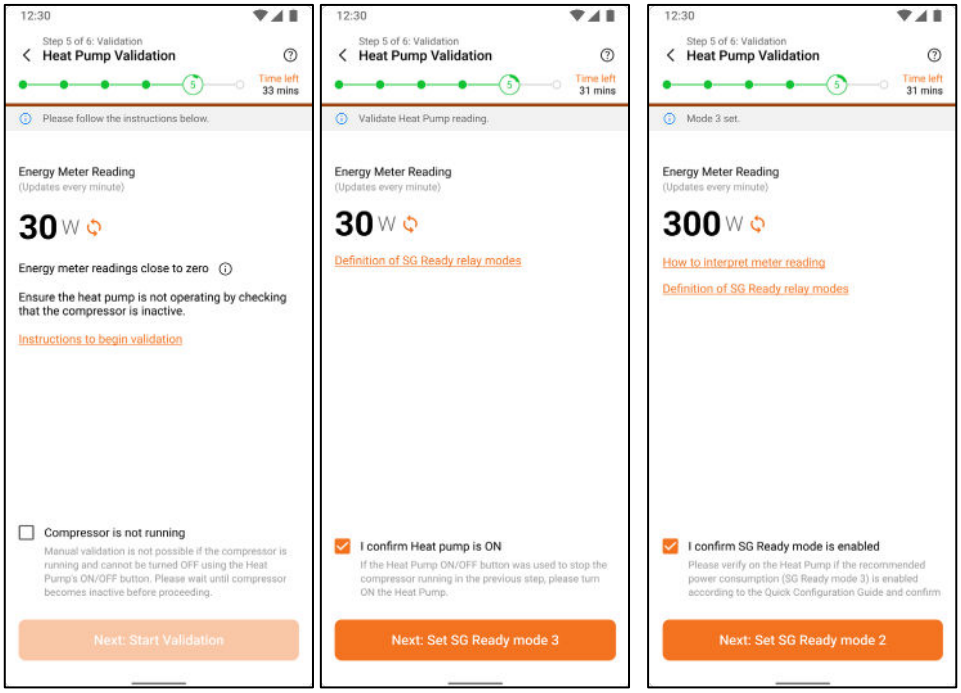
i) Verify prerequisites: Ensure site activation is complete, and the IQ Energy Router is online. Select either *Automated Validation* (recommended) or *Manual Validation*.

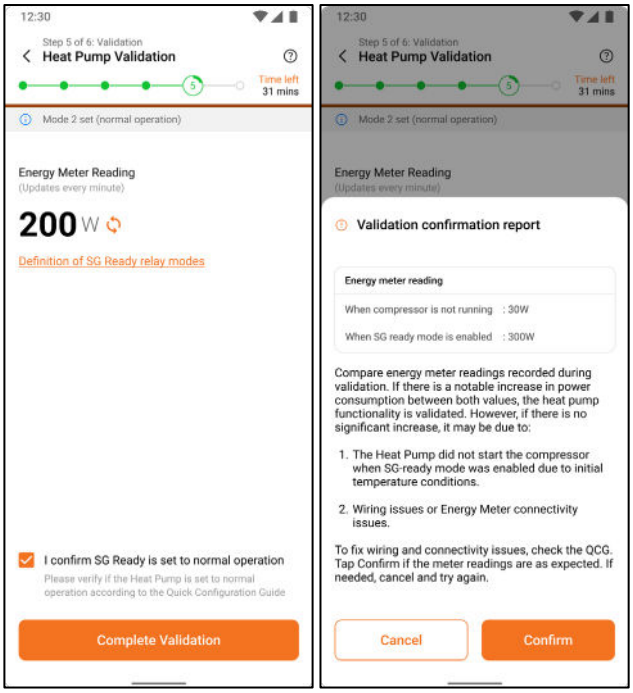
ii) Automated Validation: Based on initial conditions, the system will automatically initiate the process by setting SG-Ready Mode 4 (definite start mode) to validate an increase in meter readings, or Mode 1 (hard block, similar to a utility block) to validate a decrease in readings. At the end of validation, the system will be to set SG-Ready Mode 2 (normal operation).



iii) For unsupported heat pumps, proceed with **Manual validation**:

- Before starting validation, manually check that the compressor is off. If it is running, use the heat pump's ON and OFF buttons to turn it off.
- Once the compressor status is confirmed, you can send the SG-Ready command to increase operation (Mode 3).
- Validate the heat pump's functionality by checking the meter readings after sending the command.
- Finally, the system must be transitioned to Mode 2 (normal operation) and confirmed in the validation confirmation report to complete the validation.

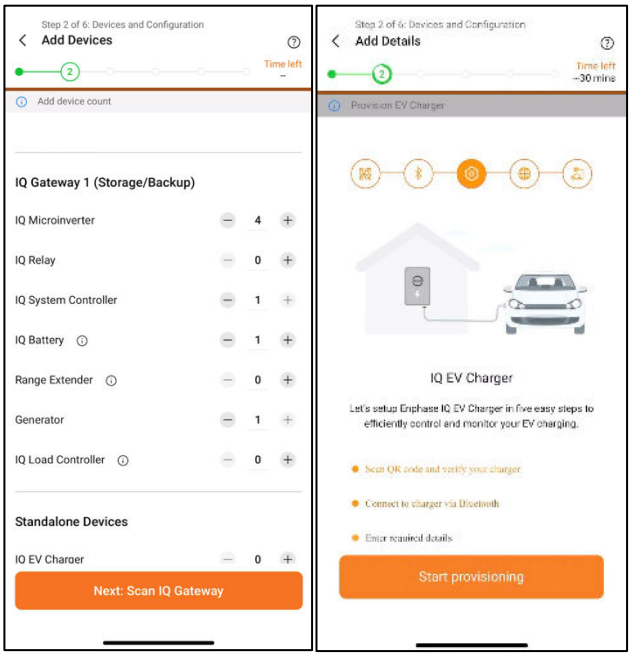




7 Commissioning IQ EV Charger

7.1 Commissioning process

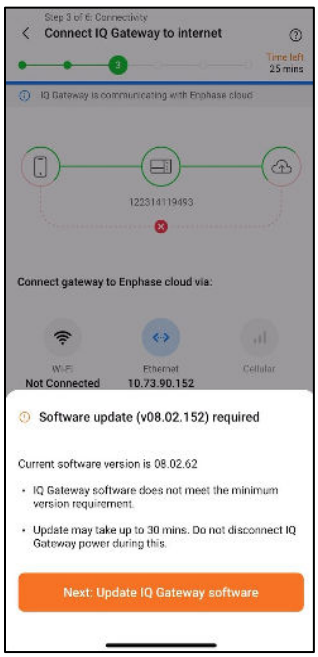
- Add IQ EV Charger from the **Add Devices** screen.
- Ensure you are connected to the internet to complete the scanning and configuration of the IQ EV Chargers.
- Scan or enter the IQ EV Charger serial number, connect to Bluetooth to configure its Wi-Fi connectivity, and complete the provisioning process.

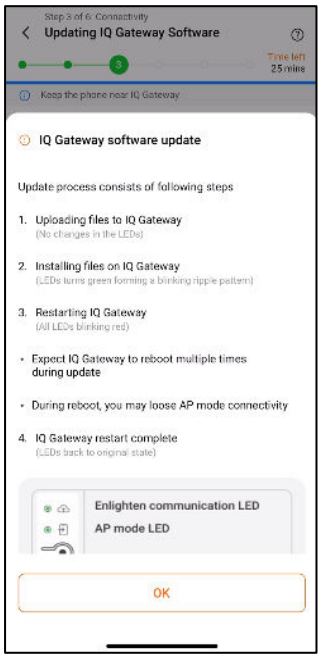


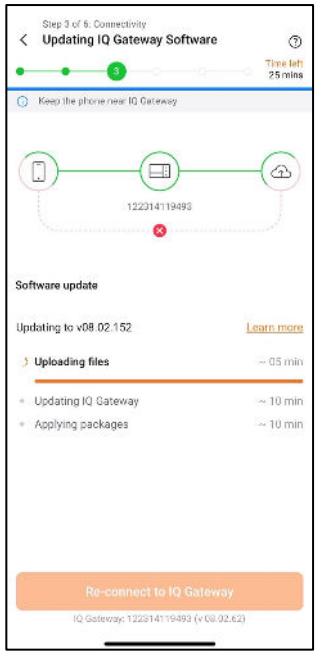
8 IQ Gateway upgrade process

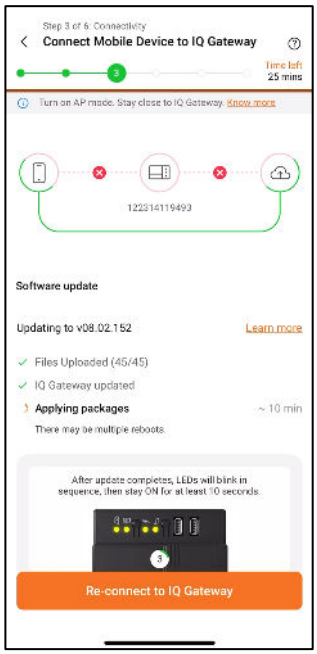
To start the IQ Gateway upgrade process, connect to the IQ Gateway using the AP mode. The Enphase Installer App will recommend a mandatory IQ Gateway upgrade for the system's functioning.

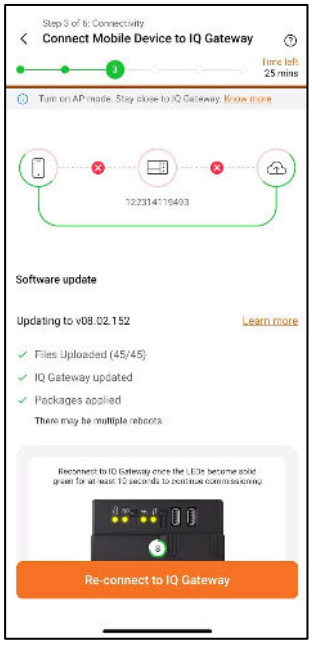
1. Tap **Next: Update IQ Gateway software** to start the update process.
2. The phone automatically disconnects after the packages are applied, and the IQ Gateway will undergo multiple restarts.
3. Reconnect to IQ Gateway when the LEDs on the IQ Gateway are solid green for 10 seconds.
4. Verify the IQ Gateway software to confirm if the update happened successfully. You will be shown the button to start provisioning.

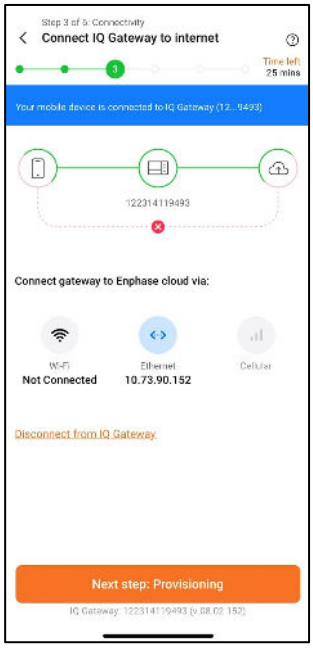












8.1 Different states of IQ Battery

2nd-generation IQ Battery:

STATE	DESCRIPTION
UNCOMMISSIONED	
Flashing blue	After booting up, IQ Battery 5P has paired with an IQ Gateway but has not passed the commissioning three-way handshake to confirm that it is an Enphase device
Flashing green	After passing the three-way handshake with the IQ Gateway
AFTER COMMISSIONING (NORMAL OPERATION)	
Rapidly flashing yellow	Starting up/establishing communications
Red double flash	Error. See "Troubleshooting"
Solid yellow	Not operating due to high temperature. See "Troubleshooting"
Solid blue or green	Idle. Color transitions from blue to green as state of charge increases. Check Enphase Installer Platform for charge status
Soft pulse blue	Discharging
Soft pulse green	Charging
Soft pulse yellow	Sleep mode
Red triple flashes	DC switch OFF
Red one-second flash	Rapid Shutdown mode
Off	Not operating. See "Troubleshooting"

3rd-generation IQ Battery:

STATE	DESCRIPTION
UNCOMMISSIONED	
Flashing blue	After booting up, IQ Battery 5P has paired with an IQ Gateway but has not passed the commissioning three-way handshake to confirm that it is an Enphase device
Flashing green	After passing the three-way handshake with the IQ Gateway
AFTER COMMISSIONING (NORMAL OPERATION)	
Rapidly flashing yellow	Starting up/establishing communications
Red double flash	Error. See "Troubleshooting"
Solid yellow	Not operating due to high temperature. See "Troubleshooting"
Solid blue or green	Idle. Color transitions from blue to green as the state of charge increases. Check Enphase Installer Platform for charge status
Soft pulse blue	Discharging
Soft pulse green	Charging
Soft pulse yellow	Sleep mode
Red triple flashes	DC switch OFF
Off	Not operating. See "Troubleshooting"

8.2 Replacing an IQ Gateway onsite

Refer to the "Replace IQ Gateway" section in the Self-service return and replacement technical brief.

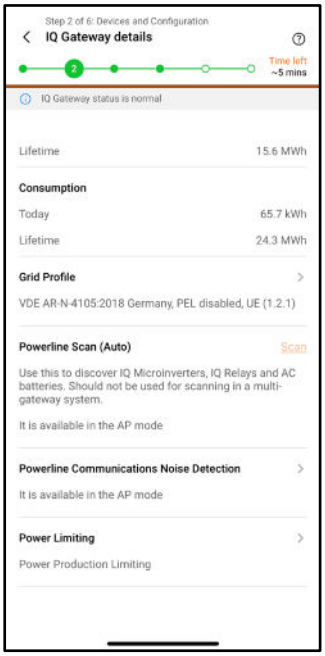
8.3 Replacing an IQ Battery onsite

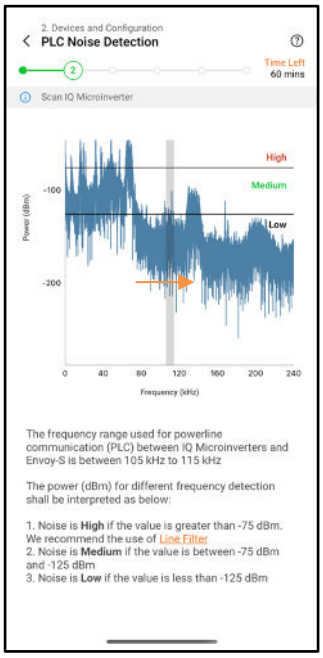
Refer to the "Replace IQ System Controller and IQ Batteries" section in the Self-service return and replacement technical brief.

9 Appendix

9.1 Appendix A: PLC Noise Detection

You can now monitor the quality of power line communication between IQ Gateway and the microinverters. The PLC Noise Detection feature provides real-time data on the noise detected when communicating with IQ Gateway.





9.2 Appendix B: Replacing/Decommissioning

For the replacement/decommissioning of the IQ System Controller and IQ Battery, refer to the Enphase Installer Portal self-service return and replacement technical brief.

9.3 Appendix C: Steps to perform a power cycle of the IQ Battery 3T/10T

Perform the following steps to power cycle the IQ Battery 3T/10T.

1. Turn off the IQ Battery DC switches.
2. Turn off the IQ Battery AC Breaker feeding.
3. Wait for five minutes.
4. Turn on the AC breaker feeding.
5. Verify the flashing red light in the IQ Battery for three seconds.
6. Wait for two minutes.
7. Turn on the IQ Battery DC switches.

10 Revision history

Revision	Date	Description
TEB-00015-6.0	January 2025	Updated IQ Energy Router commissioning process and added IQ EV Charger commissioning details.
TEB-00015-5.0	October 2024	Added Romania and Czech Republic regions to the non-backup configuration list.
TEB-00015-4.0	August 2024	• Added the “Auxiliary Contact Validation” section. • Added Auxiliary contact configuration information under Site Configuration (step 2b) of the “Commissioning instructions for backup storage configuration” section. • Added Austria and Belgium as applicable countries under the “Commissioning IQ Energy Router” section.
TEB-00015-3.0	February 2024	Updated the “Site Maximum Import or Grid Interconnection Limit” section.
TEB-00015-2.0	October 2023	Enphase Installer App 3.33.0 release updates.
TEB-00015-1.0	May 2023	Initial release.